



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report For Wellfleet Housing Authority

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Wellfleet Housing Authority
PWS Address	324 Old Country Road
City/Town	Wellfleet, Massachusetts 02667
PWS ID Number	4318107
Local Contact	Russell E. Tierney-White Water Inc.
Phone Number	(888) 377-7678

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	01G	165	459	Moderate
Well #2	02G	165	459	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The Wellfleet Housing Authority uses two groundwater wells for its drinking water supply; the wells are located between Spring Valley Road and Harding Drive. The wells have a Zone I radii of 165 feet and an Interim Wellhead Protection Area (IWPA) radii of 459 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The wells are treated with calcite to adjust the pH for corrosion control purposes. DEP requires public water suppliers to monitor the quality of the water. For current

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Zone Is;**
2. **Housing Authority Wastewater Treatment**
3. **Residential above ground storage tanks (ASTs) with heating oil;**
4. **Residential septic systems;**
5. **Residential lawn care; and**
6. **Local roads.**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of at least one moderate ranked threat in your Zone Is or IWPAs.

1. **Zone Is** – Currently, the wells meet DEP's Zone I regulations, which allow only water supply related activities in the Zone I and require that the land within the Zone I be owned or controlled by the public water system. The Wellfleet Housing Authority owns the entire Zone I area and only water supply related activities occur within the Zone Is. (Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.)

Recommendations:

- ✓ Continue regular Zone I inspections.
 - ✓ Do not allow any future non-water supply related activities into the Zone I area.
 - ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
2. **Housing Authority Wastewater Treatment** - The facility has an on-site enhanced waste water treatment system in accordance with Title 5 Regulations. Although there

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Potential Concern
Housing Authority wastewater treatment plant	No	Yes	Moderate	bacteria, improper disposal of hazardous materials
Residential lawncare	No	Yes	Moderate	fertilizer and pesticide use
Residential above ground storage tanks	No	Yes	Moderate	leaks, spills
Residential septic systems	No	Yes	Moderate	bacteria, improper disposal of hazardous materials
Local roads	No	Yes	Moderate	stormwater runoff, spills

* For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

are no records of problems at the site, wastewater overflows are a potential source of microbial and non-microbial contamination if improperly managed.

Recommendation:

- ✓ Ensure that any overflows discharge outside of the protection areas.
- ✓ Operate and maintain the wastewater treatment facility according to DEP requirements in the Title 5 regulations 310 CMR 15.000.

3. **Residential Aboveground Storage Tanks (AST)** – There are numerous residential homes within the protection area. Many homes use ASTs to store heating fuel oil. If managed improperly, above ground storage tanks can be a potential source contamination due to leaks or spills of the chemicals they store.

Recommendation:

- ✓ Educate homeowners within the protection area about the potential threat of heating oil spills and leaks to groundwater.
- ✓ Encourage homeowners to install containment structures around ASTs.

4. **Residential Septic Systems** – Residents in the protection area use on-site septic systems for their wastewater disposal. Malfunctioning systems or improper disposal of hazardous materials to septic systems can contaminate groundwater.

Recommendation:

- ✓ Septic system components should be inspected and maintained on a regular basis.
- ✓ Educate residents on the risks of household hazardous materials and proper disposal of such materials.

5. **Residential Lawn Care** – Improper use or spillage of lawn care products, such as fertilizers and pesticides, can lead to groundwater contamination.

Recommendation:

- ✓ Educate residents in your protection area on proper use and disposal of lawn care products.

6. **Local Roads** – Local roads are within the IWPA. Runoff and spills from roads can contaminate public wells.

Recommendation:

- ✓ Map stormwater drainage within your IWPA.
- ✓ Ensure stormwater drains away from the Zone I.
- ✓ Continue to maintain contact with the Fire Department about spills.

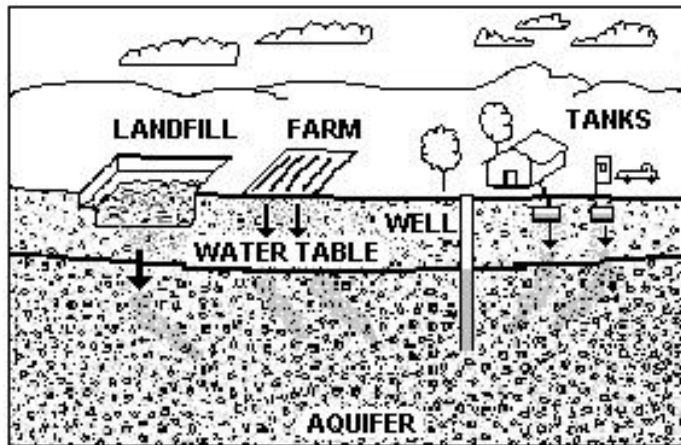


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. The Wellfleet Housing Authority is commended for meeting DEP's Zone I requirements which include land ownership and limiting activities to water supply purposes. Housing Authority officials should review and adopt the key recommendations above and the following:

Priority Recommendations:

Zone I:

- ✓ Keep future non-water supply activities out of the Zone I.
- ✓ Prohibit public access to the well and pumphouse by

For More Information:

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:
www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/ including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier and town boards.

locking facilities.

- ✓ Continue regular inspections of the Zone I. Look for illegal dumping or evidence of vandalism.
- ✓ Use Best Management Practices (BMPs) and restrict activities that could pose a threat to the water supply.
- ✓ Keep road and parking lot drainage away from the well.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Continue to post drinking water protection area signs at key visibility locations.
- ✓ Incorporate groundwater education into school curriculum (K-6 and 7-12 curricula available; contact DEP for copies).
- ✓ Work with your community to ensure that stormwater runoff at the road is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Wastewater treatment plant components should be operated and maintained on a regular basis in accordance with DEP's Title 5 regulations.

Planning:

- ✓ Work with local officials in town to include the facility's IWPA in an Aquifer Protection District Bylaw and to assist you in improving protection.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under that program. For additional information, please refer to DEP's web site. Other funding opportunities are described in *Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation* at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

7. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Source Protection Sign Order Form